Turner, B. L. and R. T. Harms. 2010. Fasciation of microsporangiate cones of *Cycas revoluta* (Cycadaceae) in Austin, Texas. Phytoneuron 2010-23: 1–3.

FASCIATION OF MICROSPORANGIATE CONES OF *CYCAS REVOLUTA* (CYCADACEAE) IN AUSTIN, TEXAS

BILLIE L. TURNER
billie@uts.cc.utexas.edu

ROBERT T. HARMS
harms@mail.utexas.edu

Plant Resources Center
The Univerrsity of Texas
Austin, Texas 78712

ABSTRACT

Observations and photos of fasciated staminate cones of *Cycas revoluta* in Austin, Texas, are presented.

KEY WORDS: fasciated cones, *Cycas revoluta,* Cycadaceae

The present report was occasioned by the chance discovery of fasciated staminate cones on a plant of *Cycas revoluta* Thunberg (Cycadaceae) on the campus of the University of Texas, Austin, and the subsequent perusal of papers on the same subject — Lasley (2010) on Florida plants and Loeblich (2007) on Texas plants. The latter worker provided an excellent overview of fasciation in *C. revoluta*, this in connection with a plant from Galveston with five fasciated staminate cones, fully documented with appropriate photographs.

Austin material of such fasciation was first noted by the senior author in the spring of 2010 from a plant having six fused (or fasciated) cones occurring on the southern entrance to the UT campus, immediately adjacent to the Littlefield Memorial Fountain (Figs. 1, 2). Presumably, the phenomenon was due to a fasciated stem apex, as discussed by Loeblich. As to the cause of such fasciation, there is considerable controversy. Some workers attribute the anomaly as arising from some mechanical alteration at the apical meristem, noting that seemingly normal meristem producing staminate cones one year may give rise to fasciated cones the next (Loeblich 2007). Indeed, Loeblich opined that periodic wind forces along the Gulf Coast of Texas induced the fasciation found on plants at Galveston Island. Lasley, however, thought that an unseasonably cold winter in Florida induced the phenomenon.

The fasciation of *Cycas revoluta* reported in the present paper seemingly arose spontaneously, this from a normal apical meristem, as judged by the appearance of a single microsporangium at that position in 2009, this collected by the senior author, but only after several days of wrestling with an immature sporangium that finally yielded its trophy. In short, the physical efforts of cone removal the previous year possibly triggered the fasciation documented in the next. Fasciation (also referred to as cristation) is known to occur in various families and is generally thought to involve cytokinin balance.

The plant concerned will be re-examined in the spring of 2011 to see if it reverts to its normal cone-bearing condition or has been permanently embossed with its newly fasci(n)ated state.

ACKNOWLEDGEMENTS

Many thanks to Nancy Elder, Life Sciences Librarian at The University of Texas, for help in procurement of literature and to Guy Nesom and Jana Kos for helpful suggestions on the manuscript itself.

LITERATURE CITED

Loeblich, A.R. 2007. Fasciation of the stem and microsporangiate cone of the gymnosperm, *Cycas revoluta* Thunberg, 1782 (Cycadaceae) in Texas. Encephalartos 90: 21–24.

Lasley, L. 2010. A crested Sago Palm — *Cycas revoluta* var. *cristata*: 1 in a million. PalmTalk: International Palm Society Forum, 15 June 2010. http://www.palmtalk.org/forum/index.php?showtopic=23973.

Figure 1. *Cycas revoluta* on the University of Texas campus, 30 June 2010.

Figure 2. *Cycas revoluta*: six fasciated cones, 15 June 2010.